IN THE CLAIMS

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND the claims according to the following:

1. (CANCELLED)

2. (PREVIOUSLY PRESENTED) A support system according to claim 3, wherein said first interface section inputs the result of the simulating by said three-dimensional-mechanism model simulating section from said three-dimensional-mechanism model simulating section to said mechanism designing section to be reflected on the designing of the mechanism.

3. (PREVIOUSLY PRESENTED) A support system, comprising:

a mechanism designing section for three-dimensionally designing a mechanism composed of a plurality of parts including an actuator and a sensor;

a three-dimensional-mechanism model simulating section, in which the mechanism is structured as a three-dimensional-mechanism model, for simulating an operation of the mechanism;

an embedded software developing section for developing a control program, which is to be embedded in the mechanism to control the operation of the mechanism, as embedded software;

a first interface section for inputting designing data, which is created in said mechanism designing section as the result of the designing by said mechanism designing section, from said mechanism designing section to said three-dimensional-mechanism model simulating section to be reflected on the three-dimensional-mechanism model; and

a second interface section transferring actuator instruction data and sensor data between said three-dimensional-mechanism model simulating section and said embedded software developing section while synchronizing said three-dimensional-mechanism model simulating section and said embedded software developing section in operation with each other,

wherein:

said embedded software developing section includes a status-transition diagram or table creating section for creating and editing a status-transition diagram or table describing specifications of the embedded software to execute detailed designing of the embedded software; and

said second interface section transfers data between said three-dimensional-mechanism model simulating section and said status-transition diagram or table creating section while synchronizing said three-dimensional-mechanism model simulating section and said status-transition diagram or table creating section in operation with each other.

4. (Original) A support system according to claim 3, wherein:

said status-transition diagram or table creating section employs a multi-task, which executes a plurality of tasks in parallel to one another, and executes, separately from the plural tasks, a synchronous task functioning so as to stop the plural tasks during the simulation operation of said three-dimensional-mechanism model simulating section; and

said second interface section synchronizes said three-dimensional-mechanism model simulating section and said status-transition diagram or table creating section in operation with each other using the synchronous task.

5. (Previously Presented) A support system according to claim 4, wherein the synchronous task is set to a highest priority to control starting/stopping of the plural tasks in accordance to the synchronous task to thereby synchronize said three-dimensional-mechanism model simulating section and said status-transition diagram or table creating section in operation with each other.

6. (PREVIOUSLY PRESENTED) A support system according to claim 3, wherein:

said embedded software developing section includes a microcomputer chip in which said embedded software is embedded during the developing; and

said second interface section transfers data between said three-dimensional-mechanism model simulating section and said microcomputer chip while synchronizing said three-dimensional-mechanism model simulating section and said microcomputer chip in operation with each other.

7. (Original) A support system according to claim 6, wherein:

said microcomputer chip employs a multi-task, which executes a plurality of tasks in parallel to one another, and executes, separately from the plural tasks, a synchronous task functioning so as to stop the plural tasks during the simulation operation of said three-dimensional-mechanism model simulating section; and

said second interface section synchronizes said three-dimensional-mechanism model simulating section and said microcomputer chip in operation with each other using the synchronous task.

8. (Original) A support system according to claim 7, wherein said three-dimensional-mechanism model simulating section and said microcomputer chip are synchronized in operation with each other by setting the synchronous task to a highest priority to control starting/stopping of the plural tasks in accordance to the synchronous task.

9. (PREVIOUSLY PRESENTED) A support system according to claim 3, wherein said second interface section transfers:

an actuator instruction signal for the actuator in the three-dimensional-mechanism model from said embedded software developing section to said three-dimensional-mechanism model simulating section; and

a sensor signal, which is obtained as the result of simulation in response to said actuator instruction signal, from said three-dimensional-mechanism model simulating section to said embedded software developing section.

10. (Original) A support system according to claim 9, further comprising an analyzing section for analyzing and displaying variation of said actuator instruction signal for the actuator and said sensor signal from said three-dimensional-mechanism model simulating section with real time.

11. (CANCELLED)

12. (CURRENTLY AMENDED) A computer-readable recording medium according to claim 13, wherein said first interface program inputs the result of the simulating by said three-dimensional-mechanism model simulating section from said three-dimensional-mechanism model simulating section to said mechanism designing section to be reflected on the designing of the mechanism.

13. (PREVIOUSLY PRESENTED) A computer-readable recording medium in which a support program to realize, on a computer, a function of assisting a development of embedded software to be embedded in a mechanism, composed of a plurality of parts including an actuator and a sensor, as a control program to control the mechanism is recorded, said support program comprising:

a mechanism designing program for instructing the computer to function as a mechanism designing section which designs the mechanism three-dimensionally;

a three-dimensional-mechanism model simulating program for instructing the computer to function as a three-dimensional-mechanism model simulating section, in which the mechanism is structured as a three-dimensional-mechanism model, for simulating an operation of the mechanism;

an embedded software developing program for instructing the computer to function as an embedded software developing section which develops the embedded software;

a first interface program for instructing the computer to function as a first interface section for inputting designing data, which is created in said mechanism designing section as the result of the designing by said mechanism designing section, from the mechanism designing section to the three-dimensional-mechanism model simulating section to be reflected on the three-dimensional-mechanism model;

a second interface program for instructing the computer to function as a second interface section which transfers actuator instruction data and sensor data between the three-dimensional-mechanism model simulating section and the embedded software developing section while synchronizing the three-dimensional-mechanism model simulating section and the embedded software developing section in operation with each other,

wherein:

said embedded software developing program includes a status-transition diagram or table creating program instructing the computer to function as a status-transition diagram or table creating section for creating and editing a status-transition diagram or table describing specifications of the embedded software to execute detailed designing of the embedded software; and

said second interface program transfers data between said three-dimensional-mechanism model simulating section and said status-transition diagram or table creating section while synchronizing said three-dimensional-mechanism model simulating section and said status-transition diagram or table creating section in operation with each other.

14. (Original) A computer-readable recording medium according to claim 13, wherein:

said status-transition diagram or table creating program employs a multi-task, which executes a plurality of tasks in parallel to one another, and executes, separately from the plural tasks, a synchronous task functioning so as to stop the plural tasks during the simulation operation of said three-dimensional-mechanism model simulating section; and

said second interface program synchronizes said three-dimensional-mechanism model simulating section and said status-transition diagram or table creating section in operation with each other using the synchronous task.

15. (Original) A computer-readable recording medium according to claim 14, wherein said three-dimensional-mechanism model simulating section and said status-transition diagram or table creating section are synchronized in operation with each other by setting the synchronous task to a highest priority to control starting/stopping of the plural tasks in accordance to the synchronous task.

16. (PREVIOUSLY PRESENTED) A computer-readable recording medium according to claim 13, wherein said second interface program transfers data between said three-dimensional-mechanism model simulating section and a microcomputer chip, in which said embedded software being developed is embedded, while synchronizing said three-dimensional-mechanism model simulating section and said microcomputer chip in operation with each other.

17. (Original) A computer-readable recording medium according to claim 16, wherein:

said microcomputer chip employs a multi-task, which executes a plurality of tasks in parallel to one another, and executes, separately from the plural tasks, a synchronous task functioning so as to stop the plural tasks during the simulation operation of said three-dimensional-mechanism model simulating section; and

said second interface program synchronizes said three-dimensional-mechanism model simulating section and said microcomputer chip in operation with each other using the synchronous task.

18. (Original) A computer-readable recording medium according to claim 17, wherein said synchronous task is set to a highest priority to control starting/stopping of the plural tasks in accordance to the synchronous task to thereby synchronize said three-dimensional-mechanism model simulating section and said microcomputer chip in operation with each other.

19. (CURRENTLY AMENDED) A computer-readable recording medium according to claim 13, wherein said second interface program transfers:

an actuator instruction signal for the actuator in the three-dimensional-mechanism model from said embedded software developing section to said three-dimensional-mechanism model simulating section; and

a sensor signal, which is obtained as the result of simulation in response to said actuator instruction signal, from said three-dimensional-mechanism model simulating section to said embedded software developing section.

20. (Original) A computer-readable recording medium according to claim 19, wherein said support program further comprises an analyzing program for instructing the computer to

function as an analyzing section which analyzes and displays variation of said actuator instruction signal for the actuator and said sensor signal from said three-dimensional-mechanism model simulating section with real time.

21. (PREVIOUSLY PRESENTED) A support computer apparatus comprising:

a programmed computer processor controlling the support computer apparatus according to a process comprising:

three-dimensionally designing a mechanism composed of a plurality of parts comprising an actuator and a sensor;

simulating operation of the mechanism according to a three-dimensional-mechanism model of the mechanism based upon design data from the three-dimensional designing of the mechanism;

developing an embedded control program to be embedded in the mechanism to control the operation of the mechanism, by creating and editing a status-transition diagram or table describing specifications of the embedded control program as detailed designing of the embedded control program, and exchanging mechanism data and the status-transition specifications with the three-dimensional-mechanism model simulating while synchronizing the three-dimensional-mechanism model simulating with the status-transition specifications for the developing of the embedded control program.